

What is claimed is:

1. An apparatus that provides reliable operation of a gas burner heater in high air flow
5 conditions, wherein said apparatus comprises:
a pilot light assembly comprising:
a pilot light orifice for a pilot flame;
a vented pilot housing with a flame deflector cap;
a pilot light gas line;
10 a thermocouple with connecting electrical leads;
a mounting bracket; and
a windshield;
wherein the windshield works synergistically with the pilot light assembly, which has
15 components that provide some protection from wind; and
wherein the pilot assembly windshield provides a protected zone against high velocity
air infusion for both the pilot flame and for the thermocouple and against high air flow, is a
partially perforated tubular chamber that is intersectingly engaged with the mounting
20 bracket.
2. The apparatus as claimed in claim 1, wherein said flame deflector cap for directs the
pilot light toward the thermocouple.
- 25 3. The apparatus as claimed in claim 2, wherein said vented pilot housing has a
thermocouple restrictor plate for restricting the flow of updrafts across the thermocouple.
4. The apparatus according to claim 1, wherein said pilot light assembly further comprises
a pilot light base, which provides support for the vented pilot housing, the pilot light, and the
30 thermocouple.

5. The apparatus as claimed in claim 1, wherein said gas burner heater is a poultry brooder with a conical ceramic element.
6. The apparatus as claimed in claim 1, wherein said gas burner is a poultry brooder having
5 a radiant element.
7. The apparatus as claimed in claim 6, wherein said radiant element is a perforated stainless steel chamber.
- 10 8. The apparatus as claimed in claim 3, wherein said vented pilot housing has at least one restrictor port, where the at least one restrictor port that provides low flow velocity supply air to the pilot light.
9. The apparatus as claimed in claim 8, wherein said vented pilot housing requires no
15 ignition portal for lighting the pilot light.
10. The apparatus as claimed in claim 9, wherein the pilot light can be ignited without removing the pilot assembly windshield.
- 20 11. The apparatus as claimed in claim 8, wherein the mounting bracket is slotted such that the windshield can be positioned by merely aligning the windshield with slots on the mounting bracket.
12. The apparatus as claimed in claim 3, wherein the pilot light stays lit in air flows of 7-9
25 mph, and the thermocouple stays sufficiently warm that it does not generate a false indication that the pilot light is extinguished, therein causing the gas to the gas burner heater to be shut off.
13. The apparatus as claimed in claim 5, wherein said pilot light assembly is mounted
30 adjacent to a burner located under the conical ceramic element.

14. The apparatus as claimed in claim 7, wherein said pilot light assembly is mounted such that the pilot light is mounted in the radiant element.

15. The apparatus as claimed in claim 3, wherein said improved pilot light has high tolerance to variations in air flow, without an increase in the size of the pilot light flame.

16. The apparatus as claimed in claim 5, wherein the ceramic element brooder heater comprises:

- a ceramic heating element;
- 10 a reflector;
- supports for the ceramic heating element;
- a burner; and
- a fuel supply line.

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17. The apparatus as claimed in claim 6, wherein the radiant brooder heater comprises:

- an inner cone supporting a burner assembly;
- a burner plate;
- a perforated stainless steel emitter chamber;
- 20 a reflector; and
- a fuel supply line.

18. The apparatus as claimed in claim 1, wherein the pilot light can be appropriately sized and combined in multiple pilot light assemblies with windshields to accommodate any size heater or bank of heaters.

19. The apparatus as claimed in claim 18, wherein said apparatus is suitable for all commercial fuels that can be gasified, such as natural gas, propane, butane and kerosene.

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20. A windshield for a gas pilot light assembly, where said apparatus comprises: a substantially tubular chamber having open ends, where at least one wall of the tubular chamber has a section that is partially perforated and a section that is solid, and where the tubular chamber entirely shields the gas pilot light assembly, said gas pilot light assembly
5 being comprised of a pilot light orifice for a pilot flame, a gas line, a vented pilot housing with a flame deflector cap, a thermocouple with electrical leads, and a mounting bracket for the gas pilot light assembly;

wherein said windshield provides a protected zone against high air flow for the pilot
10 flame and for the thermocouple, therein preventing flame blow-out and false thermocouple sensing;

wherein said windshield works synergistically in concert with the gas pilot light assembly, which also has components that provide some protection from high air flow; and
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wherein said windshield provides access to the pilot light so it can be ignited without removing the apparatus.

21. The windshield as claimed in claim 20, wherein the gas pilot light assembly is
20 adaptable to a poultry brooder having a heating element comprised of a ceramic heating element, a reflector, supports for the heating element, a burner, and a fuel supply line;

wherein the windshield ensures the proper operation of the gas pilot light assembly, and by derivation the proper operation of the burner.
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22. The windshield as claimed in claim 20, wherein the gas pilot light assembly is adaptable to a poultry brooder having a radiant element comprised of a perforated stainless steel emitter chamber, an inner cone, a reflector, supports for the heating element, a burner, and a fuel supply line;
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wherein the windshield ensures the proper operation of the gas pilot light assembly, and by derivation the proper operation of the burner.

5 23. The windshield as claimed in claim 20, wherein the mounting bracket has slots for receivingly intersecting the tubular chamber, and as such, the least one wall of the tubular chamber is a means for attaching said windshield to the mounting bracket.

24. The windshield as claimed in claim 21, wherein the pilot assembly is positioned beneath the ceramic element proximal to the burner

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25. The windshield as claimed in claim 22, wherein the pilot assembly is substantially positioned within perforated stainless steel emitter chamber.

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26. The windshield as claimed in claim 20, wherein high air flow is at least 7 – 9 mph.

27. The windshield according to claim 20, wherein the gas pilot light assembly is further comprised of a restrictor plate for restricting the flow of updrafts across the thermocouple and guiding the pilot light flame so that it is directed at the thermocouple.

20 28. The apparatus as claimed in claim 1, wherein the apparatus enables the use of a small pilot light orifice, which reduces gas consumption by the pilot light.

25 29. The apparatus as claimed in claim 4, wherein the vented pilot housing can be removed by merely slid off the base, therein allowing quick access to the a pilot light orifice for ease of cleaning.

30. The apparatus as claimed in claim 29, wherein the vented pilot housing has tabs that engage the base.

31. The apparatus as claimed in claim 1, wherein both the windshield and the vented pilot housing can be quickly removed providing quick access to the pilot light orifice for cleaning.

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